

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172102**Date: 31/12/2012****Subject Name: Non-Destructive Testing****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define and differentiate between destructive and non-destructive testing. **07**
 (b) List most commonly used NDT methods. State advantages and limitations of NDT **07**
- Q.2** (a) Briefly explain the sequence of operations in DPT. **07**
 (b) Explain briefly leak and pressure testing techniques **07**
OR
 (b) Explain basic principle of Radiographic examination. **07**
- Q.3** (a) Discuss about techniques of ECT. **07**
 (b) List applications and limitations of Radiographic inspection. **07**
OR
- Q.3** (a) Explain basic principles of Thermography. **07**
 (b) Discuss briefly about selection of different NDT techniques for detection of defects. **07**
- Q.4** (a) Explain briefly various ultrasonic inspection techniques. **07**
 (b) Explain principle and technique of Acoustic Emission Testing (AET). **07**
OR
- Q.4** (a) Discuss about ultrasonic transducers (probes). **07**
Q.4 (b) List applications, advantages and limitations of ultrasonic testing. **07**
- Q.5** (a) Explain principle of Magnetic Particle Testing (MPT). **07**
 (b) Discuss briefly about (a) Penetrants (b) Cleaners and Emulsifiers (c) developers. **07**
OR
- Q.5** (a) What is Visual examination? Explain Visual examination method using Boroscope. **07**
 (b) With line diagram explain ultrasonic flaw detection equipment. **07**
